

REMARKS

Applicants attach hereto as an Appendix an explanation of the amendments to their new claims as well as an explanation pursuant to 37 C.F.R. § 1.173(c).

The withdrawn claims 19 and 25-27 have been cancelled.

The objection to the title is not understood and is therefore traversed. Reconsideration is requested on grounds that the title is consistent with the claim preambles.

Likewise, the objections to the drawings are traversed. Numerals 205 and 207 are shown in Fig. 20. Claim 18 has been amended to avoid the objection thereto. In any event, Applicants submit that the description at Col. 9, lines 4-23 in conjunction with Fig. 17 are more than sufficient for one of ordinary skill to understand, make and use the invention set forth in Claim 18.

The objections to the claims as set forth at pages 5-7 of the Office Action are traversed at least in part.

Where antecedent bases was lacking (e.g. Claim 1, line 14), Applicants have attempted to make appropriate amendments. Other objections, however, are not deemed well founded. The term “rotating axis”, for example, is defined in the Specification and is equivalent to the shaft (col. 3, line 23).

In a number of instances, the objection is based, explicitly or implicitly, on the question of “how” a claimed element is formed or operates. Applicants submit, however, that this does not raise an objectionable issue or even a § 112, ¶ 2 issue. The answer to “how” is

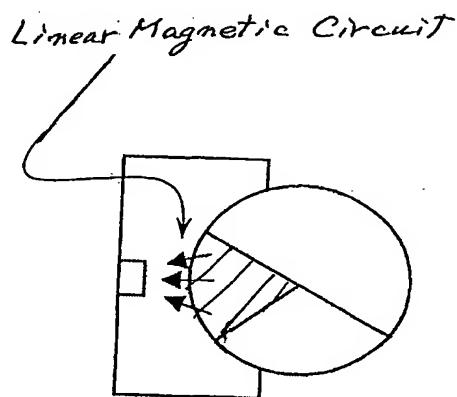
had by reference to the disclosure, not to the claims themselves because it is the disclosure that is charged with the obligation to teach "how" to make and use the invention. Where appropriate, as in Claim 14 for example, Applicants have reformulated the claim language to adhere more closely to the terminology used in the disclosure. That notwithstanding, Applicants cannot agree with examination of any claim in which language has been ignored.

With regard, to Claim 6, Applicants direct attention to Figs. 19 and 20 along with col. 10, lines 31-46 of their specification in the '637 Patent. Similarly, with regard to Claim 15, attention is directed to Fig. 14 col. 8, lines 9-24 and, with regard to Claim 18, Fig. 17 and col. 9, lines 4-24. As to all other claims not specifically addressed above, Applicants believe that either the foregoing amendments address the objections or that reconsideration of other objections is appropriate in light of the foregoing comments.

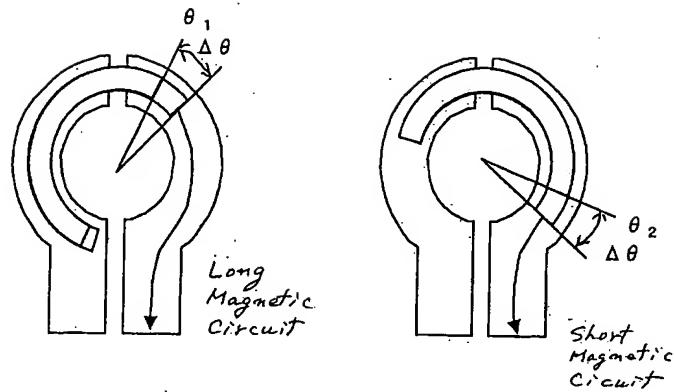
The rejection of Claim 13 under 35 C.F.R. § 112, ¶2 has been addressed by the foregoing amendment to that claim. Reconsideration is requested.

The rejection of Claims 1-4, 9, 11, 14, 17, 21, 22 and 24 as being anticipated by Foggia et al. under 35 U.S.C. § 102(b), of Claims 5-8 and 23 as being unpatentable over Foggia et al., under 35 U.S.C. § 103(a), of Claim 10 as being unpatentable over Foggia et al. in view of Willet under 35 U.S.C. § 103(a), of Claims 12 and 18 as being unpatentable over Foggia et al. in view of Togo et al. under 35 U.S.C. § 103(a), of Claims 13 and 16 as being unpatentable over Foggia et al. in view of Pecheny et al. under 35 U.S.C. § 103(a) and of claims 15 and 20 as being unpatentable over Foggia et al. in view of Hamaoka et al. under 35 U.S.C. § 103(a) are traversed. Reconsideration of each of these rejections is requested for the following reasons and in light of the foregoing amendments.

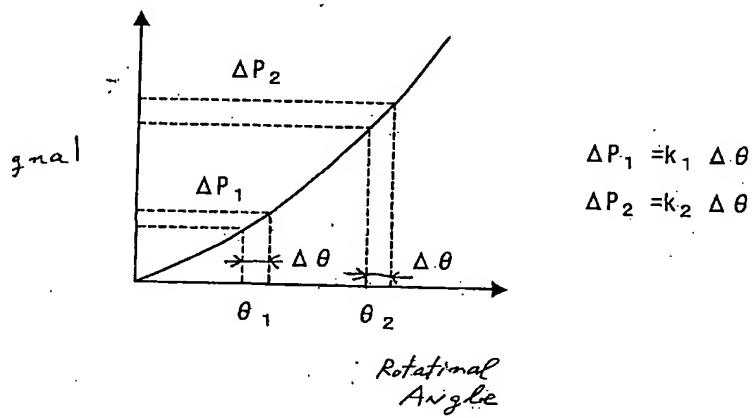
The features added in Claim 1-3, 5, 9, 14 and 21 result in the formation of a linear magnetic circuit between the (permanent) magnet and the protruded magnetic substance portion. As a result of this arrangement, the linearity of the magnetic circuit is independent of the rotational position or angle of the magnet as illustrated in the sketch below.



The Foggia et al. document, which is central to all the rejections, teaches only that pole pieces 4a, 4b define a ring shaped magnetic circuit from a magnet of the rotor 9 to the legs 4a, 4b. As shown in the following sketches, this arrangement results in a substantial variation in the length of the magnetic circuit based on the rotational position or angle of the rotor magnet. Unlike the present invention, this known arrangement causes an undesirable change in the magnetic flux rate.



The foregoing results in a non-linear relationship in magnetic induction as illustrated below in the $\Delta\theta$ range where the ratios K_1 and K_2 of the change in signal strength are different.



Consequently, the teachings of Foggia et al. alone or in hypothetical combination with any of the aforementioned secondary references neither teach nor suggest the claimed invention.

Accordingly, early and favorable action is now earnestly solicited.

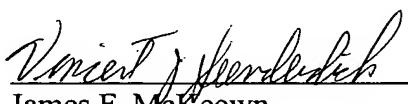
Serial No. 10/797,702
Amendment
July 20, 2006

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #056205.49851RE).

Respectfully submitted,

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APPENDIX

With regard to new Clams 9 et seq., the following changes were made.

Claim 9 has been amended to change “magnetic” to -- magnet -- in response to the Examiner’s objection. Also, see the discussion below with regard to the changes explained per 37 C.F.R. § 1.173(c).

Claim 13 has been amended to delete “preferably approximately 1 mm” in response in the Examiner’s Section 112, ¶ rejection.

Claim 14 has been amended to define the magnetic circuit as having a “portion for converging a magnetic flux” in response to the Examiner’s objection. Also see the 37 C.F.R. § 1.173(c) discussion below.

Claim 16 has been amended to define that it is at least the magnetic plates that have a specified magnetic flux density in response to the Examiner’s objection.

Claim 18 has been amended reformulated by changing “integrated into” into -- comprising -- and defining the unit as a “reason-molded unit” in response to a drawing objection.

Claim 20 has been amended by deleting “or said magnetic flux concentrating portion” in response to the Examiner’s objection.

Claim 21 has been amended to change “the” axial direction to -- an -- axial direction to obviate a potential antecedent basis issue. The uniform air gap

recitation has been amended from "formed between" to -- defined between -- to set forth the gap in a more structural way. A similar change was made to the recitation of the small air gaps as well as making it clear that they are smaller than said -- uniform -- air gap. Also see the 37 C.F.R. § 1.173(c) discussion below.

37 C.F.R. § 1.173(c) Statement

With respect to Claims 1, 2, 3, 5, 9, 14 and 21, the following elements have been added. The reference numerals in the parenthesis relate to the drawings in this Application and provide the support for the additional elements if a further explanation is not provided:

- A. The upper magnetic plate is separated to a first upper magnetic plate (11) and a second upper magnetic plate (12).
- B. The lower magnetic plate is separated to a first lower magnetic plate (13) and a second lower magnetic plate (14).
- C: The permanent magnet consists of two permanent magnets (numeral 10 in Figure 5A).
- D: The first permanent magnet is magnetized in one direction (Downward magnetic field shown in Figure 5A).
- E: The second permanent magnet is magnetized in the opposing direction (Upward magnetic field shown in Figure 5A).

F: A first area in which the magnetic field of the first permanent magnet has one direction (area A in Figure 5A) and a first area in which magnetic field of the second permanent magnet has the opposite direction (areas b and c in Figure 5A) are positioned between the first upper magnetic plate (11) and the first lower magnetic plate (13).

G: A second area in which the magnetic field of the first permanent magnet has one direction and a second area in which magnetic field of the second permanent magnet has the opposite direction are positioned between the second upper magnetic plate (2) and the second lower magnetic plate (14).

Consequently, the above elements together necessarily define the claimed linear magnetic circuit between the (permanent) magnet and the protruded magnetic substance portion recited in the last clause of each of Claims 1, 2, 3, 5, 9, 14 and 21.